

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A33NM
Western International Aviation
C-130A
May 22, 1990

Type Certificate Data Sheet A33NM

This data sheet which is part of Type Certificate No. A33NM prescribes conditions and limitations under which the product for the Type Certificate was issued meets the airworthiness requirements of the Federal Aviation Administration.

Type Certificate Holder: Western International Aviation, Inc.
Route 31, Box 869
Tucson, Arizona 85706

I. Model C-130A (Restricted Category), approved May 22, 1990

Engines 4 Allison turboprop T-56-A9 or T-56-A11 engines (No intermix allowed)

Fuel Commercial aviation turbine fuels conforming to ASTM Specification No. D 1655-59T, types Jet B, Jet A-1, Jet A, or commercial equivalents of MIL-T-5624, grade JP-4 or JP-5.

Lubricating oil Synthetic oil conforming to Allison Specifications EMS-35 or MIL-L-7808

Engine Limits Static, standard day, sea level:

<u>TURBINE INLET TEMP.</u>	<u>TORQUE</u>	<u>OIL TEMP</u>
Takeoff (5 min.)	19,400 in-lb., T-56-A9	100 degrees C MAX
977 degrees C	19,600 in-lb., T-56-A11	
Maximum Continuous	16,100 in-lb., T-56-A9	85 degrees C MAX
927 degrees C	17,600 in-lb., T-56-A11	

Propeller and propeller limits (alternate) 4 Aeroproducts. A6341FN-D1A Hydraulic propellers hub and blade assembly part number 6506600 with Alpha Prefix -wy designation serial numbered blades only.

Diameter 15 ft.

Repair and rework to be in accordance with USAF T.O. 3H3-19-2.

Single rotation, three-blade assembly with governing speed setting 1016 prpm (13,820 erpm). Propeller assembly is complete with spinner, feathering and reversing provisions, constant speed control, negative torque control, syncrophaser, and electrical ice control.

Blade Angles (Degrees)

Blade angle settings are at the no. 72 station.

Feather	82.0
Mechanical low pitch stop	5.9 to 6.5
Flight idle (hydraulic low pitch stop)	7.8 to 8.2
Negative	-15.3 to -15.7
Total allowable blade angle range	97.5

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Propeller oil (to be used with Aeroproducts propeller)	Penola Aviation Instrument Oil, government no. 1191, manufacturer, ESSO Standard Oil Co., Type P-Q Rust preventative no. 107, government no. 6603X, manufacturer, American Oil Co., or government no. 3106 or 3106X manufacturer, Humble Oil and Refining Co., FSN 9150-473-9849.	
Airspeed limits (Knots IAS)	V _{NO} (Maximum operating)	See T.O. 1C-130A-1
	V _A (Maneuvering)	Section 5, Pages 5-15
	V _B (Turbulent air penetration)	65 knots above power off stall speed but not to exceed 180 knots IAS. Fig 6-1, T.O. 1C-130A-1 shows stall speeds measured as a function of gross weight.
	V _{FE} (Take-off and approach 50%)	180 knots
	V _{FE} (Landing, 100%)	145 knots
	V _{LO} (Landing gear operation)	170 knots
	V _{LE} (Landing gear extended)	170 knots
	V _{LL} (Landing light extended)	170 knots
Heated Windshield	If electric windshield is operative, it must be used for all flight operations. Operation without windshield heat is permissible provided (1) the airplane is not flown in known icing conditions, and (2) the maximum speed limit below 10,000 ft is 187 KCAS.	
Center of Gravity (C.G. Range)	See Figure 5-6, USAF T.O. 1C-130A-1	
Datum	Fuselage Station 94.0 W.L. 142.98, BL Zero (NAS 221) screw head on bottom of forward fuselage, 71.0 inches forward of center line of nose gear strut).	
Mean Aerodynamic Chord (M.A.C.)	164.5 inches, leading edge F.S. 487.4	
Leveling means	Provisions for leveling by plumb line are installed in the cargo compartment on the left side of approximately F.S. 637. A plumb line support bracket is located on the fuselage side panel at approximately W.L. 252, BL 64L, and a leveling plate is located on the top of the cargo floor curb at approximately W.L. 150, BL 64L.	
Maximum takeoff weight	124,200 lbs.	
Maximum landing weight	96,000 lbs. up to 124,200 lbs. See page 5-20 of T.O. 1C-130A-1.	
Maximum zero fuel weight	97,000 lbs.	
Minimum crew	Three, Pilot, Co-Pilot, and Flight Engineer	
Passengers	NONE. Personnel limited to flight crew and persons essential to operations.	
Cargo capacity	See USAF T.O. 1C-130A-1 section 5 and T.O. 1C-130A-9.	
Fuel capacity	See page 1-49 of T.O. 1C-130A-1 for fuel capacity and usable fuel. See note 1 for unusable fuel.	
Oil capacity	Four nacelle tanks (Arm 442.0). Capacity for each tank; 8 gallons usable, 12 gallons total. See note 1 for system oil.	

Maximum operating altitude	40,000 ft. (No cabin pressurization system. Oxygen system required.)		
Control surface movements (degrees) (See USAF T.O. 1C-130A-2-9)	Aileron	up 25	Down 15
	Aileron trim tab	up 20	Down 20
	Elevator	Up 40	Down 15
	Elevator trim tab	Up 6	Down 25
	Rudder	Left 35	Right 35
	Rudder trim tab	Left 25	Right 25
	Wing flap	Down 36	(100%)
Serial numbers eligible	Surplus military C-130A aircraft that have been found to comply with the requirements of this data sheet.		
Certification basis	The certification basis is FAR 21.25(a) (2).		
Production basis	None. Prior to original certification of each aircraft, an FAA representative must perform an inspection for workmanship, materials, and conformity with the approved technical data. All applicable Technical Orders affecting airworthiness must be accomplished.		
Equipment	The basic required equipment as prescribed in the applicable Airworthiness Regulations (see Certification Basis), must be installed in the aircraft for certification.		

- Note 1.
- A. Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary must be in each aircraft at all times.
 - B. The location of the center of gravity for any gross weight configuration, determined from T.O. 1-1B-40, Handbook of Weight and Balance Data, must fall within the percent of the mean aerodynamic chord (MAC) shown on the Center of Gravity Limitation Chart (figure 5-6). For information and method of calculating the airplane center of gravity, refer to T.O. 1C-130A-9, Cargo Loading Handbook and T.O. 1-1B-40, Handbook of Weight and Balance Data.
 - C. The weight of the system fuel and oil as defined below, and hydraulic fluid, must be included in the airplane empty weight.

System fuel: The weight of all fuel required to fill all lines and tanks up to the zero fuel point on the fuel gauges in the level flight attitude.

Unusable (includes drainable and trapped fuel):

Tank	Lbs.*	Arm
1	65	555.3
2	65	565.4
3	65	565.4
4	65	555.3
Left Aux.	0	
Right Aux.	0	
Total	260	
Trapped or line fuel	149	563.5

*This column includes 41 lbs. of fuel (trapped in lines) distributed to each tank at 5 lbs. per tank.

System oil: The weight of oil remaining in the engine, lines, and tanks after subtracting the usable oil from the total capacity.

Total: 221 lbs.

Arm 442.0

D. Fuel loading and usage

1. Fuel must be loaded and used to provide compliance with the "Fuel Unbalance" limitation contained in USAF T.O. 1C-130A-1 for normal fuel management procedures.
2. Phillips fuel additive PFA-55MB may be used in concentrations not to exceed 0.15 percent by volume. No fuel system anti-icing credit is allowed.

Note 2. Latest revisions of the following documents are required.

- A. T.O. 1C-130A-1, Change 2, dated March 22, 1981, and USAF T.O. 1C-130A-1-1 must be available in the aircraft for all flight operations.
- B. USAF T.O. 1C-130A-9, "Cargo Loading Handbook," and Supplement No. 1, dated April 28, 1967, must be used to load and restrain the cargo.
- C. USAF T.O. 1-1B-40, "Handbook of Weight and Balance Data."

Note 3. C-130A aircraft with Aeroproducts propellers with Alpha Prefix serial numbered blades are approved for restricted category operation. These propellers must be maintained in accordance with USAF T.O. 3H3-19-2 dated August 1, 1961, Change 28, dated April 7, 1983, or later revision. Propeller inspection interval and replacement times shall be in accordance with USAF T.O. 1C-130A-6 dated July 1, 1982, Change 1 dated October 1, 1982, or later revision. Blades with "numbered" serial numbers are not approved.

Note 4. This approval applies to:

- A. Basic United States Air Force C-130A aircraft with no major modifications except, as required by Western International Aviation, Inc. Report WIA-0001, dated December 15, 1989, or later FAA approved revision.
- B. This airplane is eligible for special purpose operations under FAR 21.25(b)(7) for carriage of cargo in Restricted Category only. This airplane is prohibited from the carriage of persons or property for compensation or hire. Advisory Circular (A.C.) 21.17 provides guidance for issuance of type and airworthiness certificates.

The following limitations apply:

1. In addition to the operating limitations in this data sheet, area, economic, passenger, and other appropriate operation limitations in accordance with FAR 21.25 shall be shown on placards or listings accessible to the pilot.
2. The following placard is to be installed in clear view of the pilot.
 - a. "RESTRICTED CATEGORY"
 - b. "THE CARRIAGE OF PERSONS OR PROPERTY FOR COMPENSATION OR HIRE IS PROHIBITED."
 - c. "This airplane must be operated as a restricted category airplane and in compliance with the operating limitations stated in USAF T.O. 1C-130A-1 section V and in the form of placards, markings and manuals."

3. Carriage of hazardous materials is prohibited unless compliance is shown with FAR Part 91 and the applicable regulations in Title 49 of the Code of Federal Regulations, Part 175.

Note 5. The aircraft must be serviced and maintained in accordance with USAF T.O. 1C-130A-2-1 through 1C-130A-2-13.

FAA Airworthiness directives for all L-382 series aircraft and Aeroproducts series propellers must be reviewed for applicability and complied with accordingly. Compliance with applicable Time Compliance Technical Orders for the aircraft and engines must be shown.

Note 6. Prior to civil airworthiness certification, Western International Aviation must show that the following have been accomplished:

- (a) Compliance with all USAF Technical Orders which affect airworthiness.
- (b) Inspect all fuel tanks for sealant deterioration and repair as necessary.

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